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SOCIAL STRUCTURE DURING THE SCHOOL YEARS: ONSET OF THE DEGROUPING PROCESS*

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Most studies of the development of peer relations focus on the distinction between group members and nonmembers, while theoretical accounts of social structure emphasize the importance of liaisons, the locus of weak ties. Liaisons, with less integrated friendship networks, are crucial to the permeability of social systems. Using data on 2,299 children, grades three through twelve, in a community school system, we show that the proportion of group members increases through grade six, then declines, while the proportion of liaisons increases continuously. This finding challenges traditional accounts of the development of cliques and suggests that the study of the degrouping process may provide an important link between adolescent and adult social networks.

This paper presents empirical evidence of the growth of the liaison role, providing a link between theories of interpersonal relations among adolescents (Eder 1985; Hansell 1984, 1985) and theories of adult social networks (Granovetter 1973; Lin et al. 1981).

While the development of peer relations during the school years has received an increasing amount of attention, conceptualization of this structure has remained limited to the distinction between clique members and nonmembers (Eder and Hallinan 1978; Eder 1985; Crockett et al. 1984; Hansell 1985; Berndt 1982; Epstein 1983; Coleman 1980; Fine 1980; Kandel 1978; Hallinan 1979). In this study we indicate the theoretical importance of the liaison role and demonstrate its increasing significance throughout the school years.

The literature on friendships from the time of entry into the formal educational system until departure from secondary school shows a pervasive interest in peer groups, or "cliques", but very few systematic studies (Hallinan 1979, 1980; Hansell 1984). This deficiency is important since recent work suggests that sociometric counts of friendship are limited in their ability to serve as indicators of more complex aspects of network structure (Hansell 1985).

Several recent studies on the organization of children's friendships have begun to fill this gap. Using cross-sectional data on grades six through eight and longitudinal data on grades four through six, Hallinan (1979) demonstrated that differences in cliquing patterns occur by grade. Hansell (1981) found a curvilinear relationship between ego development and network structure in a private high school. Ethnographic research by Eder (1985) and Fine (1980) revealed the relationship between dyadic friendships and larger peer structures. Two studies have examined changes in the subjective importance of peer groups. Crockett et al. (1984) followed a sample of children from the sixth to the eighth grades and observed an *increase* in the proportion of students who rated cliques as important and who claimed to be members of a clique. Using a slightly older group of students (grades seven through twelve), Brown et al. (1986) showed a linear *decline* in the rated importance of crowd affiliation.

Though these studies and others attend to the larger social structural patterns that characterize children's friendships, the exclusive empirical focus on cliques is not consistent with most theoretical descriptions of available role categories. The two major roles examined in previous work—*clique member*, a participant in a tightly knit group of interacting peers, and *isolate*, a participant with no or relatively few links—are not the only possibilities for locating an individual in a network of social relations. By focusing on the clique as the primary locus of peer relations, the global or macro structure of linkages has been neglected.

A *liaison* is a member of a social system which serves a linking function between its parts owing to the fact that the actor maintains many

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relations outside of particular groups (Schwartz and Jacobson 1977; Rogers and Kincaid 1982; Burt 1982). From a structural perspective clique members are not the only individuals with important places in a network. Nor are those that are not members of cliques necessarily isolates. Rather, one who is tied to others without being a clique member plays a distinct social role with different consequences for the organization of the system. Systems composed of many liaison roles are less insular and less closed to the transmission of information and culture (Granovetter 1973; Rogers and Kincaid 1982).

The distinction between clique members and liaisons as types of system participants is important for current theories of the school as a context for the development of peer relations. It is generally agreed that the junior high or middle school is an extremely critical locus for the development of relatively homophilous peer groups (Eder 1985; Billy and Udry 1985). A transition between the single classrooms and less segregated relations of the grade school and the greater autonomy and heterosexual relations of high school, the junior high is often seen as the breeding ground for homogeneous groups of age-mates. But no study has yet established the development of this cliquing process over the entire grade range. At the same time the global structure of relations within the school system itself is poorly understood.

The conventional view holds that tightly knit peer groups increase in membership, in number, and in importance during the middle school years (Sullivan 1953; Coleman 1961). Crockett et al. (1984, p. 160), for example, show that reported clique membership increases from grades six to eight. But at the same time they admit that "either cliques are more common in the seventh than the sixth grade or seventh graders are more aware of them."

Recent ethnographic studies suggest an alternative view that emphasizes the extreme complexity of patterns of friendship and group formation. (Fine 1980; Eder 1985). Contrary to the picture of a continual increase in the number of cliques and the proportion of individuals belonging to them, the social structure may become less stable, relatively more permeable, and heterogeneous at the same time that *concern* with group membership is reaching its height. That is, cliques may become more important because membership becomes a scarce resource or because the most popular students are seen as members, while the actual proportion of students who are clique members declines.

Evaluation of these competing views can be accomplished by examining the social structure of peer relations *as a system* rather than by examining individual-level membership in cliques. Previous work, limited to a few selected grade levels and employing the distinction between clique members and nonmembers, has been unable to describe the overall development of peer relations throughout the school years. The conventional view predicts an increase in the number of group members, with a peak during the junior high years. Support for the alternative view would be provided by an increase in the number of liaison roles relative to the number of group members.

DATA AND METHODS

We assembled our data set in conjunction with ongoing biomedical screenings of a biracial Southern community. These data have two advantages for our purposes. First, the sociometric items asked of respondents in grades three through twelve enable the creation of an extensive synthetic cohort with measures of change in peer relations in elementary, middle, and senior high schools. Second, because respondents were not restricted to choices within their own classrooms, the data allow description of social structure at the macro level.

Three network items were administered to 2,460 children:[1] "Please write the full names and grades of the people you name in the following questions. Write down as many names or as few names as you want. All your answers will be kept secret. (1) Who from school are your best friends? (2) Who from school would you like to be your friend? (3) Who from school do you spend the most free time with?" Although the wording specifies the school context, extraschool linkages were permitted, which constituted five percent of the total. One limitation of the data is that only the first three responses were coded. Fixed-choice designs underestimate the total linkages present in the system (Holland and Leinhardt 1973). However, as Schofield and Whitley (1983) indicate, peer nominations may be preferable to rosters for the assessment of more intimate relations.

A subsample of 449 children was retested two weeks after the first screening using the same questions. The percentage who were consistent in their choices increased with age, but averaged over 80 percent. Since friendship choice (item 1) showed higher test-retest reliability and has been the focus of most previous studies, we employ it in the analysis.

The basic partition of actors was accomplished with NEGOPY (negative entropy), a

[1] Removing four schools reduces the number of students to 2,299. The distribution by grade is: grade 3 (299), 4(302), 5(287), 6(253), 7(270), 8(193), 9(208), 10(203), 11(179), 12(105).

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program which assigns actors to mutually exclusive and jointly exhaustive role categories on the basis of the aggregate pattern of ties among individuals and groups (Richards and Rice 1981). NEGOPY is based on a *cohesion* rather than a *structural equivalence* approach to network data (Burt 1983). Since the primary objectives are (1) to define clusters of nodes that have more contact with one another than with nodes of other clusters (i.e., groups) and (2) to assign each respondent a discrete role category utilizing pairwise linkages between individuals, NEGOPY provides an ideal solution (Rogers and Kincaid 1982).

The structural constructs of isolates, liaisons, and group members are operationalized as follows:

An *isolate* is an individual who has (1) no links to any other individuals in the system (type 1) or (2) only one link to another individual (type 2). For our purposes this general category includes dyads, members whose only link is to each other.

A *liaison* is an individual who is linked as a (1) tree node, that is, a link connecting into branching structures with isolates (type 2) at one end and group members or other liaisons at the other; (2) direct liaison, most (>50.01 percent) of whose interaction is with group members (but not any one group); (3) indirect liaison, most (>50.01 percent) of whose links are with other liaisons.

A *group* is a set of at least three individuals each of whom has most of his/her linkages with others in the group, is connected by some path to all other members, and remains connected when up to 10 percent of the group is removed (preventing situations in which two groups with few connections are identified as a single group).

The identification of groups and assignment of roles is based on symmetric linkages, so the problem of reciprocity must be addressed. Traditional solutions are either to eliminate nonreciprocated links (undesirable given the restricted choice format of these data) or to assume reciprocity. However, since the operational definition of group is based on the amount of interaction rather than the absolute number of links, it was possible to use this information in the identification of linkage patterns. We symmetrized all links, then assigned a weight of one to nonreciprocated ties and a weight of two to reciprocated ties on the assumption that if actors nominated each other, their relationship was more important for their mutual pattern of interaction.

Although data exist on all twelve schools in the community, the analysis is restricted to eight public schools given the interest in whether the *transitions* between schools introduce observable changes in role structure. Four schools are excluded because they do not follow the typical grade divisions used in the district. Three of these are private schools with small enrollments. The fourth deviates from the community pattern (though not the American norm) by including grades three through six in one building.[2]

Most children change schools three times prior to finishing secondary education. They attend one of three public schools through grade three, switch to another of three schools during grades four through six, transfer to the community junior high school for grades seven and eight, then to high school for grades nine through twelve. These institutional transfers formed the basis for the initial decision to divide the population by school and grade level. Respondents who nominated at least one individual were input to NEGOPY in four separate analyses: third graders only (all schools), fourth through sixth graders (all schools), junior high students, and senior high students. Note that the procedure of symmetrizing links means that an individual who was named once but names no one and an individual who names one friend but is not named *both* would be analyzed as isolates (type 2).

RESULTS

Table 1 shows the percentage of system members who fall into each role category for each of four grade partitions. In this analysis a student may receive more than one role assignment if he or she is named by someone in another grade/school category. Stated differently, every member of a partition does not necessarily belong to the specified grades, although the large majority do. The percentage of isolates (type 1) declines in each category from third grade through high school, while the percentage of liaisons (type 2) increases over the same period. The proportion of group members declines as well, though not smoothly because of the increase from grade three to the remainder of the elementary years. The groups themselves *decrease* in size with grade level. Table 2 shows

[2] The inclusion of this school does not alter the basic findings presented in Figure 1.

Table 1. Role Categories by Grade Level (Percentage)

	Grade Level			
Role Category	3	4–6	7–8	9–12
Group member	34.9	46.3	32.8	23.2
Liaison 3	6.4	17.2	22.0	38.8
Liaison 2	1.7	2.9	2.4	1.0
Liaison 1	8.4	3.5	5.9	7.6
Isolate 2	26.8	16.2	27.3	21.2
Isolate 1	21.8	18.7	9.4	8.2

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Table 2. Group Composition by Grade Level

Grade Level	Number of Groups	Mean Size	% Heterogeneous Race or Gender (*n*)	% Heterogeneous Groups		
				Mixed Race	Mixed Gender	Both
3	13	8.0	46 (6)	83	17	0
4–6	44	7.9	27 (12)	42	17	42
7–8	35	6.5	10 (3)	0	66	33
9–12	37	6.3	19 (6)	0	100	0

that 13 third grade groups include an average of 8 members, declining to 6.3 in high school.[3]

Although this analysis provides general support for the importance of the liaison role, it is not grade specific. In Figure 1 the operational roles are collapsed into the three main theoretical constructs and plotted by grade level. Only individuals who belong to the designated grade are retained. Figure 1 thus describes the structural composition of the community school system. The proportion of students who are group members increases throughout elementary school but then begins a steady decline throughout junior and senior high school. A regression of proportion group members on grade shows a significant negative trend ($b = -4.68$, s.e. $= .96$, $R^2 = .75$). Including a quadratic term in the equation increases the explained variance 15 percent ($R^2 = .90$).

The proportion of isolates fluctuates without exhibiting a clear trend. The proportion of liaisons exhibits a nearly monotonic increase from less than one-third (.28) in third grade to over two-thirds (.69) by the end of high school. The regression of proportion liaisons by grade is positive and significant ($b = 4.51$, s.e. $= .46$, $R^2 = .92$).

Liaison roles, then, increase in prominence over the middle and senior grades, while group membership decreases. Previous studies show that homophily with respect to gender, race, and other social characteristics is important in the formation of friendships. One would expect such characteristics to be associated with these role types. For this population the following held (percentages not shown): (1) black males are more likely to be isolates than other categories and less likely to be members of groups; (2) white females are more likely to be group members and less likely to be liaisons; (3) liaisons are less popular than group members, as measured by the average number of others who indicate they would like to be friends ($t = 5.05$, $p < .001$); (4) liaisons are somewhat lower in socioeconomic status than group members, as measured by a trichotomous variable indicating the general status of their neighborhood ($t = 2.57$, $p = .01$).

The importance of homogeneity can also be observed among groups throughout the school years. Junior high school groups exhibit more homogeneity than those at other grade levels. In the third grade, nearly half (46 percent) of groups are racially or sexually heterogeneous; in grades four to six, only one quarter (27 percent) (Table 2). However, in junior high, the proportion of heterogeneous groups drops to a mere tenth, before rising again during high school (19 percent).

The bases for group homogeneity change across the school system as a whole. As the research literature leads us to expect, there is a clear shift from racial to sexual heterogeneity. In the third grade, five of the six mixed groups are racially heterogeneous. The late elementary years show a fairly even distribution between groups that are racially and sexually mixed, including a substantial proportion that consists of both blacks and whites, males and females. Of three junior high mixed groups two are predominantly heterosexual. By high school all of the heterogeneous groups are heterosexual.

[3] The average size of groups in Hallinan's (1979) study, which uses roster-type best friend choices, ranges from 4.2 (grade 4) to 7.0 (grade 6) in her longitudinal data and from 5.2 (grade 8) to 5.8 (grade 6) in her cross-sectional data. Although the working definition of group differs in this study, it supports the finding of a general decline in group size from elementary to middle school.

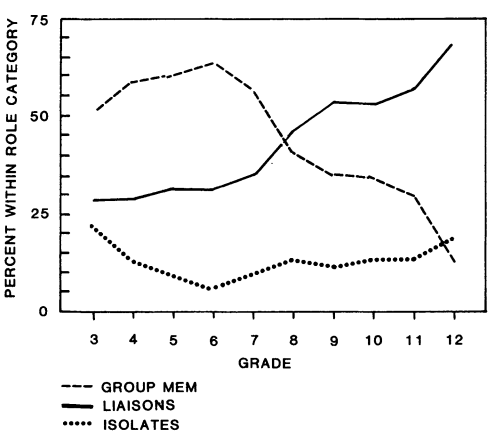

Fig. 1. Percentage of Group Members, Liaisons, and Isolates by Grade

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DISCUSSION

The results strongly suggest that junior high school *is* a watershed for the development of peer relations, but not in the fashion that has generally been assumed. An examination of social structural change from the third through the twelfth grade shows that the composition of groups undergoes a shift during junior high: more than at any other period they are racially and sexually homogeneous. Moreover, group members are more popular, higher in socioeconomic status, and more likely to be white females than nongroup members. All this is consistent with the view that middle school is a stage wherein group boundaries, popularity, and peer status are matters of preeminent importance, where selves are shaped in interaction with cohesive groups of similar others.

What this view does not take into account is the overall structure of the school, assuming that as the cultural importance of the peer group increases the number of group members increases as well. On the contrary, these data show that the proportion of school children who are group members *decreases* beginning in junior high school. This decline does not result from an increasing proportion of isolates but from an increasing proportion of liaisons, participants whose pattern of social relationships is not well described by the dichotomy of clique members and nonmembers. Liaisons are not children without friends, but rather are less likely to have friends who interact predominantly with one another.

Of course, we do not know the extent to which this particular community is representative without other studies that are equally comprehensive in terms of grade range. However, this finding seems to have two important implications for the development of peer relations.

First, in terms of the structure of the school system, the junior high school disrupts the pattern of social relations and group membership that has developed in the stable classroom context of elementary school. Such an argument would not be surprising but for the way in which the pattern is disrupted. The data show that group membership starts to *decline* during the very period where social relations begin to take on new significance. Throughout the secondary school years, the overall pattern of relationships changes from a system of tightly knit cliques within which most interaction takes place to a more diffuse, less structured network of individuals with fewer overlapping friends. A larger number of liaisons relative to group members suggests a less segmented social system. Indeed, departmentalized classrooms, where students spend the day with different sets of only partially overlapping classmates, together with more extensive extracurricular activities would lead one to expect the development of this pattern—had it not been obscured by accounts that overemphasize the importance of cliques.

Second, given that group members may indeed possess higher status than nonmembers, there are a number of alternative mechanisms that can explain the observed structural change. One is Eder's (1985) suggestion that a "cycle of popularity" may push some individuals (e.g., cheerleaders and athletes) into relatively stable cliques, while nonmembers remain permanent outsiders. Nonmembers may not wish to associate with members whom they perceive as "stuck up" but do not themselves form stable groups, maintaining a shifting set of relations in the absence of these structural constraints.

Dunphy's (1963) account gives cliques a reduced role in favor of relatively more amorphous "crowds" serving as the facilitators of heterosexual socialization. Although it has always been difficult to operationalize this concept, it implies a less structured system, particularly during the period of heterosexual pairing, and the eventual breakup of the system of cliques.

Finally, we note that the liaison pattern of relations represents the development of an important kind of adult socialization. Given the diffuse character of occupational and professional life, the lower individual integration and greater number of weak ties maintained by liaisons increase the openness and cultural receptivity of both organizational and interorganizational systems. Hence, the study of the degrouping process may represent an important link between adolescent and adult social networks.

REFERENCES

Berndt, Thomas. 1982. "The Features and Effects of Friendship in Early Adolescence." *Child Development* 53:1447–60.

Billy, John and J.R. Udrey. 1985. "Patterns of Adolescent Friendship and Effects on Sexual Behavior." *Social Psychology Quarterly* 48:27–41.

Brown, B.B., S.A. Eicher, and S. Petrie. 1986. "The Importance of Peer Group ("Crowd") Affiliation in Adolescence." *Journal of Adolescence* 9:73–96.

Burt, Ronald. 1982. *Toward a Structural Theory of Action: Network Models of Social Structure, Perception, and Action*. New York: Academic Press.

———. 1983. "Cohesion Versus Structural Equivalence as a Basis for Network Subgroups." Pp. 262–82 in *Applied Network Analysis*, edited by Ronald Burt and Michael Minor. Beverly Hills, CA: Sage.

Coleman, James. 1961. *The Adolescent Society*. New York: Free Press.

Coleman, John C. 1980. "Friendship and the Peer Group in Adolescence." Pp. 408–31 in *Handbook of*

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Adolescent Psychology, edited by J. Adelson. New York: Wiley.

Crockett, L., M. Losoff, and A. Petersen. 1984. "Perceptions of the Peer Group and Friendship in Early Adolescence." *Journal of Early Adolescence* 4:155–81.

Dunphy, D.C. 1963. "The Social Structure of Urban Adolescent Peer Groups." *Sociometry* 26:230–46.

Eder, Donna. 1985. "The Cycle of Popularity: Interpersonal Relations Among Female Adolescents." *Sociology of Education* 58:154–65.

Eder, Donna and Maureen Hallinan. 1978. "Sex Differences in Children's Friendships." *American Sociological Review* 43:237–50.

Epstein, J.L. 1983. "The Influence of Friends on Achievement and Affective Outcomes." Pp. 177–200 in *Friends in School: Patterns of Selection and Influence in Secondary Schools.*, edited by J.L. Epstein and N.L. Karweit. New York: Academic Press.

Fine, Gary A. 1980. "The Natural History of Preadolescent Male Friendship Groups." Pp. 293–320 in *Friendship and Social Relations in Children*, edited by H. Foot, A. Chapman, and J. Smith. New York: Wiley.

Granovetter, Mark. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78:1360–80.

Hallinan, Maureen. 1979. "Structural Effects on Children's Friendships and Cliques." *Social Psychology Quarterly* 42:43–54.

_____. 1980 "Patterns of Cliquing Among Youth." Pp. 321–42 in *Friendship and Social Relations in Children*, edited by H. Foot, A. Chapman, and J. Smith. New York: Wiley.

Hansell, Stephen. 1981. "Ego Development and Peer Friendship Networks." *Sociology of Education* 54:51–63.

_____. 1984. "Cooperative Groups, Weak Ties, and the Integration of Peer Friendships." *Social Psychology Quarterly* 47:316–28.

_____. 1985. "Adolescent Friendship Networks and Distress in School." *Social Forces* 63:698–715.

Holland, P. and S. Leinhardt. 1973. "The Structural Implications of Measurement Error in Sociometry." *Journal of Mathematical Sociology*. 3:85–112.

Kandel, Denise. 1978. "Homophily, Selection, and Socialization in Adolescent Friendships." *American Journal of Sociology* 84:427–36.

Lin, Nan, Walter Ensel, John Vaughn. "Social Resources and the Strength of Ties." *American Sociological Review* 46:393–405.

Richards, William and Ronald Rice. 1981. "The NEGOPY Network Analysis Program." *Social Networks* 3:215–23.

Rogers, E. and J. Kincaid. 1982. *Communication Networks: Towards a New Paradigm for Research*. New York: Free Press.

Schofield, Janet and Bernard Whitley. 1983. "Peer Nominations Versus Rating Scale Measurement of Children's Peer Preference." *Social Psychology Quarterly* 46:242–51.

Schwartz, Donald and Eugene Jacobson. "Organizational Communication Network Analysis: The Liaison Communication Role." *Organizational Behavior and Human Performance* 18:158–74.

Sullivan, Harry. 1953. *The Interpersonal Theory of Psychiatry*. New York: Norton.

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